

Remarks

Claims 16, 22 and 28 have been amended and new claims 32-46 have been added. Support for the amendments to the claims and the new claims can be found in general throughout Applicant's Specification, and in particular, for example, as follows: claim 22, original claim 20, claim 28, original claim 20, and page 11, lines 23-30, claim 32, original claim 20, claim 33, original claim 3, claim 34, original claims 4-8, claim 35, original claim 9, claim 36, original claims 10-11, claims 37-44, original claims 12-19, claims 45 and 46, page 14, line 27- page 15, line 2 and FIG. 2. No new matter has been added. Applicant reserves the right to prosecute the amended claims in their original form in a continuing application.

Applicant thanks the Examiner for his helpful suggestions regarding the inadvertent clerical error in claim 16 and for kindly indicating that claim 20 is allowable.

Claims 28-31 stand rejected under 35 U.S.C. § 112, second paragraph.

A claim that omits matter disclosed to be essential to the invention as described in the specification may be rejected under 35 U.S.C. § 112, second paragraph, as being not enabled (see, M.P.E.P. 2172.01). Applicant's Specification discloses, "[i]n a preferred embodiment, the signals from the analytical detectors for a single gas of interest are summed." (Applicant's Specification, page 9, lines 20-21.) As such, the step of analyzing summed signals is not disclosed to be essential since the step of summing the signals is disclosed as preferred but not essential embodiment. However, in order to advance prosecution, Applicant has amended claim 28 to include the step of analyzing summed signals. Applicant submits that the rejection of claim 28 under 35 U.S.C. § 112, second paragraph, has been overcome and requests that it be withdrawn.

Claims 29-31 satisfy the criteria of 35 U.S.C. § 112, second paragraph, for at least the same reasons set forth above with respect to claim 1, and Applicant respectfully requests that the rejection of claims 29-31 under 35 U.S.C. § 112, second paragraph, be withdrawn. Applicant further submits that it is not necessary for claim 31 to recite the language set forth in the March 15, 2006 Office action. Should this rejection be maintained, Applicant respectfully requests that the basis supporting the rejection be provided.

Claims 22, 24, 26 and 27 stand rejected under 35 U.S.C. § 102(e) over Tacke et al. (U.S. 6,555,820).

Tacke et al. disclose a photometric device for determining the gross calorific value of a test gas. Tacke et al.'s device includes a radiation source, a test cell filled with a test gas and a detector row with detector elements (see, Tacke et al., col. 5, lines 36-50). In one embodiment Tacke et al.'s device includes a prism that causes radiation to be split spatially in dependence on its wavelength (see, *Id.* at col. 5, lines 40-44). Each detector element in the Tacke et al. device is allocated to a certain, previously specified partial beam of radiation (see, *Id.* at col. 5, lines 51-52). In other words, the detector elements of Tacke et al. receive different wavelengths of light.

Claim 22 is directed to a method of detecting gas using a gas detector that includes a source of infrared radiation and at least two analytical detectors, wherein the method includes detecting infrared radiation of a first predetermined wavelength at a first of the at least two analytical detectors, and detecting infrared radiation of the first predetermined wavelength at a second of the at least two analytical detectors. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. 2131. Tacke et al.'s device includes a prism interposed in the path of the radiation beam. The prism causes the broadband infrared radiation emitted by the radiation source to be split spatially in dependence on its wavelength. A row of detectors is located in the path of the radiation in such a way that each detector element is allocated to a certain, previously specified partial beam, which corresponds to a wave range having an established width and wavelength. Each detector of Tacke et al. receives or detects only a portion of the beam of radiation and that portion is different for each detector. Thus, each detector of Tacke et al. detects a different wavelength. Tacke et al. do not teach detecting infrared radiation of a first predetermined wavelength at a first of at least two analytical detectors and detecting infrared radiation of the first predetermined wavelength at a second of the at least two analytical detectors. Tacke et al. thus fail to teach a required element of the method of claim 22. Applicant submits, therefore, that the rejection of claim 22 under 35 U.S.C. § 102(e) over Tacke et al. has been overcome and respectfully requests that it be withdrawn.

Claims 24, 26 and 27 are distinguishable under 35 U.S.C. § 102(e) over Tacke et al. for at least the same reasons set forth above in distinguishing claim 22.

Claims 23 and 25 stand rejected under 35 U.S.C. § 103 over Tacke et al.

Claims 23 and 25 depend directly from claim 22. Applicant submits that the amendment to claim 22 renders moot the rejection of claims 23 and 25 under 35 U.S.C. § 103 over Tacke et al. and respectfully requests that it be withdrawn.

Claims 1, 3-8, 10-14, 19, and 28-30 stand rejected under 35 U.S.C. § 103 over Tacke et al. in view of McVey (U.S. 6,875,399).

Tacke et al. disclose a photometric device for determining the gross calorific value of a test gas. Tacke et al.'s device includes a radiation source, a test cell filled with a test gas, a detector row with detector elements and a prism that causes radiation from the radiation source to be split spatially in dependence on its wavelength.

McVey discloses a sterilization system that includes a sensor system for detecting a fluid component in a multi-component fluid. (McVey, col. 4, lines 26-27.) The system of McVey includes a first detector (122) that is sensitive to radiation emitted by hydrogen peroxide and a second detector (124) that is sensitive to radiation emitted by water (see, *Id.* at col. 12, lines 6-13). McVey also discloses a detector (126) that can be used as a reference to determine the intensity of transmitted light, which is then used to normalize the signal from the two other detectors (see, *Id.* at col. 12, lines 17-21).

Claim 1 is directed to a gas detector that includes at least one source of infrared radiation, at least two analytical detectors and at least one reference detector adapted to provide an output signal independent of the first gas of interest. To establish a *prima facie* case of obviousness, "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings." M.P.E.P. 2142. It is undisputed that Tacke et al. do not teach a reference detector adapted to provide an output signal independent of the first gas of interest.

McVey does not cure the deficiencies of Tacke et al. Tacke et al.'s device is designed for the photometric determination of the gross calorific value of a test gas (see, Tacke et al, col. 1, lines 17-20), while McVey's device is designed for detection of a fluid component, such as hydrogen peroxide vapor, in a multi-component mixture (see,

McVey, col. 4, lines 26-30). Since Tacke et al.'s device is directed towards measuring the gross calorific value of a test gas and McVey's device is for detecting the presence of a fluid component of a multi-component mixture, the skilled artisan would have no reason to look to McVey and further would have no reason to modify Tacke et al. in light of McVey. For this reason alone, Applicant submits that the rejection of claim 1 under 35 U.S.C. § 103 over Tacke et al. in view of McVey is unwarranted and requests that it be withdrawn.

The proposed combination of Tacke et al. and McVey is further deficient for at least the following additional reasons. As set forth above, Tacke et al.'s device includes a prism that spatially separates the radiation beam into a plurality of partial beams. Tacke et al. disclose, "the detector elements 7, respectively, comprise an electronic circuit, which normalizes the respective measuring signal to a measuring signal that is obtained without test gas." (Tacke et al., col. 6, lines 7-10.) Tacke et al. thus use an electronic circuit to normalize the measured signal. Prior to measuring the test gas, Tacke et al. obtain a measurement of the signal at each wavelength without the test gas present in the system, save the measured signal to a reference memory, and then use the saved information to normalize the readings obtained on the test gas (see, e.g., Tacke et al. col. 1, lines 20-25 and the discussion regarding another embodiment at col. 9, lines 17-22). Thus Tacke et al. provide their own solution to the issue of a reference signal.

Nothing in McVey teaches or suggests modifying a device for determining the gross calorific value of a test gas such as the device of Tacke et al. McVey also does not teach or suggest replacing a reference system such as the one of Tacke et al. with the reference detector of McVey. Therefore, the skilled artisan would have no reason to modify the device of Tacke et al. in view of McVey in the manner proposed in the March 15th Office action. Accordingly, Applicant submits that the rejection of claim 1 under 35 U.S.C. § 103 over Tacke et al. in view of McVey has been overcome and respectfully requests that it be withdrawn.

Claims 3-8, 10-14, and 19 are distinguishable under 35 U.S.C. § 103 over Tacke et al. in view of McVey for at least the same reasons set forth above in distinguishing claim 1.

Applicant submits that the amendment to claim 28 renders moot the rejection of claims 28-30 under 35 U.S.C. § 103 over Tacke et al. in view of McVey and respectfully requests that it be withdrawn.

The rejection of claim 9 under 35 U.S.C. § 103 over Tacke et al. and McVey and in further view of Busignies et al. (U.S. 2,866,900) and Wong (U.S. 5,650,624) is based on the above-refuted premise that the combination of Tacke et al. and McVey teaches or suggests the device of claim 1. Since this premise has been refuted, the rejection of claim 9 under 35 U.S.C. § 103 over Tacke et al. and McVey and further in view of Busignies et al. and Wong cannot stand and Applicant respectfully requests that it be withdrawn.

The rejection of claim 16 under 35 U.S.C. § 103 over Tacke et al. and McVey and further in view of Busignies et al. is based on the above-refuted premise that the combination of Tacke et al. and McVey teach or suggest the device of claim 1. Since this premise has been refuted, the rejection of claim 16 under 35 U.S.C. § 103 over Tacke et al. and McVey and further in view of Busignies et al. cannot stand and Applicant respectfully requests that it be withdrawn.

The claims now pending in the application are in condition for allowance and such action is respectfully requested. The Examiner is invited to telephone the undersigned should a teleconference interview facilitate prosecution of this application.

Please charge any additional fees that may be required or credit any overpayment made to Deposit Account No. 501,171.

Respectfully submitted,

Date: June 14, 2006


Allison Johnson
Reg. No. 36,173

Allison Johnson, P.A.
Lake Calhoun Executive Center
3033 Excelsior Blvd., Suite 467
Minneapolis, MN 55416
Telephone (612) 929-0700
Facsimile (612) 929-0706